

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-2. (Cancelled)

3. (Currently Amended) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a direction of an applied voltage, the method comprising:

applying a periodic voltage to the display element for a period duration during both the case where the optical switching element is irradiated with light and the case where the optical switching element is not irradiated with light so that the periodic voltage applied to the display element for the period duration is greater than a threshold voltage of the display element to turn on a display thereof, wherein, in the case where the optical switching element is irradiated with light, after controlling an electrical charge amount of the display element by means of controlling a ratio of the resistance component depending at least on the direction of the ~~applied~~ periodic voltage and turning off the periodic voltage applied to the recording medium, the ratio of the resistance component is controlled by flowing charges generated by the charge generating layer through the charge transport layer, the display is turned off by applying a residual voltage to the display element, the residual voltage corresponding to the electrical charge amount and being effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

4. (Currently Amended) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching

element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a direction of an applied voltage, the method comprising:

when the optical switching element is not irradiated with light, applying a periodic voltage to the display element for a period duration so that the periodic voltage does not exceed a threshold voltage of the display element; and

when the optical switching element is irradiated with light, controlling a ratio of the resistance component depending at least on the direction of the ~~applied~~ periodic voltage to control an electrical charge amount of the display element, thus applying ~~a~~ the periodic voltage to the display element for the period duration to turn on a display thereon, the ratio of the resistance component being controlled by flowing charges generated by the charge generating layer through the charge transport layer, the ~~applied~~ periodic voltage exceeding the threshold voltage due to a partial voltage increased by the decrease of the resistance component of the optical switching element and an effectively generated voltage caused by a residual voltage to the display element corresponding to the electrical charge amount, the residual voltage being effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

5-16. (Cancelled)

17. (Currently Amended) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a polarity of an applied voltage, the method comprising:

applying a periodic voltage to the display element for a period duration during both the case where the optical switching element is irradiated with light and the case where the optical switching element is not irradiated with light so that the periodic voltage applied to the display element for the period duration is greater than a threshold voltage of the display element to turn on a display thereof, wherein, in the case where the optical switching element is irradiated with light, after controlling an electrical charge amount of the display element by means of controlling a ratio of the resistance component depending at least on the polarity of the ~~applied-periodic~~ voltage and turning off the periodic voltage applied to the recording medium, the ratio of the resistance component is controlled by flowing charges generated by the charge generating layer through the charge transport layer, the display is turned off by applying a residual voltage to the display element, the residual voltage corresponding to the electrical charge, effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

18. (Currently Amended) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a polarity of an applied voltage, the method comprising:

when the optical switching element is not irradiated with light, applying a periodic voltage to the display element for a period duration so that the periodic voltage does not exceed a threshold voltage of the display element; and

when the optical switching element is irradiated with light, controlling a ratio of the resistance component depending at least on the polarity of the ~~applied-periodic~~ voltage to control an electrical charge amount of the display element, thus applying a the periodic

voltage to the display element for a period duration to turn on a display thereon, the ratio of the resistance component being controlled by flowing charges generated by the charge generating layer through the charge transport layer, the ~~applied~~periodic voltage exceeding the threshold voltage due to a partial voltage increased by the decrease of the resistance component of the optical switching element and an effectively generated voltage caused by a residual voltage to the display element corresponding to the electrical charge, the residual voltage being effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

19-30. (Cancelled)

31. (New) The recording method according to claim 3, wherein the display element has R, B and G layers corresponding to respective threshold voltages V_R , V_B and V_G , and the threshold voltage corresponds to one of the respective threshold voltages.

32. (New) The recording method according to claim 3, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

33. (New) The recording method according to claim 31, wherein the threshold voltage V_R for the R layer corresponds to one of a first R threshold voltage V_{1th-R} and a second R threshold voltage V_{2th-R} , the threshold voltage V_B for the B layer corresponds to one of a first B threshold voltage V_{1th-B} and a second B threshold voltage V_{2th-B} , the threshold voltage V_G for the G layer corresponds to one of a first G threshold voltage V_{1th-G} and a second G threshold voltage V_{2th-G} , and relative values of the respective threshold voltages rank in ascending orders of magnitude V_{1th-R} , V_{1th-B} , V_{1th-G} , V_{2th-R} , V_{2th-B} and V_{2th-G} .

34. (New) The recording method according to claim 33, wherein the periodic voltage corresponds to a light amount, the light amount that rank in ascending order of

magnitude $L_0, L_1, L_2, L_3, L_4, L_5$ and L_6 in ascending order, the periodic voltage at L_0 being between V_{1th-G} and V_{2th-R} to produce black, the periodic voltage at L_1 being between V_{2th-R} and V_{2th-B} and the residual voltage is between the ground potential and V_{1th-R} to produce red, the periodic voltage at L_2 being between V_{2th-B} and V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce magenta, the periodic voltage at L_3 being between V_{2th-B} and V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce blue, the periodic voltage at L_4 being above V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce cyan, the periodic voltage at L_5 being above V_{2th-G} and the residual voltage is between V_{1th-B} and V_{1th-G} to produce green, the periodic voltage at L_6 being above V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce white.

35. (New) The recording method according to claim 4, wherein the display element has R, B and G layers corresponding to respective threshold voltages V_R, V_B and V_G , and the threshold voltage corresponds to one of the respective threshold voltages.

36. (New) The recording method according to claim 4, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

37. (New) The recording method according to claim 35, wherein the threshold voltage V_R for the R layer corresponds to one of a first R threshold voltage V_{1th-R} and a second R threshold voltage V_{2th-R} , the threshold voltage V_B for the B layer corresponds to one of a first B threshold voltage V_{1th-B} and a second B threshold voltage V_{2th-B} , the threshold voltage V_G for the G layer corresponds to one of a first G threshold voltage V_{1th-G} and a second G threshold voltage V_{2th-G} , and relative values of the respective threshold voltages rank in ascending orders of magnitude $V_{1th-R}, V_{1th-B}, V_{1th-G}, V_{2th-R}, V_{2th-B}$ and V_{2th-G} .

38. (New) The recording method according to claim 37, wherein the periodic voltage corresponds to a light amount, the light amount that rank in ascending order of magnitude L_0 , L_1 , L_2 , L_3 , L_4 , L_5 and L_6 in ascending order, the periodic voltage at L_0 being between V_{1th-G} and V_{2th-R} to produce black, the periodic voltage at L_1 being between V_{2th-R} and V_{2th-B} and the residual voltage is between the ground potential and V_{1th-R} to produce red, the periodic voltage at L_2 being between V_{2th-B} and V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce magenta, the periodic voltage at L_3 being between V_{2th-B} and V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce blue, the periodic voltage at L_4 being above V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce cyan, the periodic voltage at L_5 being above V_{2th-G} and the residual voltage is between V_{1th-B} and V_{1th-G} to produce green, the periodic voltage at L_6 being above V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce white.

39. (New) The recording method according to claim 17, wherein the display element has R, B and G layers corresponding to respective threshold voltages V_R , V_B and V_G , and the threshold voltage corresponds to one of the respective threshold voltages.

40. (New) The recording method according to claim 17, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

41. (New) The recording method according to claim 39, wherein the threshold voltage V_R for the R layer corresponds to one of a first R threshold voltage V_{1th-R} and a second R threshold voltage V_{2th-R} , the threshold voltage V_B for the B layer corresponds to one of a first B threshold voltage V_{1th-B} and a second B threshold voltage V_{2th-B} , the threshold voltage V_G for the G layer corresponds to one of a first G threshold voltage V_{1th-G} and a

second G threshold voltage V_{2th-G} , and relative values of the respective threshold voltages rank in ascending orders of magnitude V_{1th-R} , V_{1th-B} , V_{1th-G} , V_{2th-R} , V_{2th-B} and V_{2th-G} .

42. (New) The recording method according to claim 41, wherein the periodic voltage corresponds to a light amount, the light amount that rank in ascending order of magnitude L_0 , L_1 , L_2 , L_3 , L_4 , L_5 and L_6 in ascending order, the periodic voltage at L_0 being between V_{1th-G} and V_{2th-R} to produce black, the periodic voltage at L_1 being between V_{2th-R} and V_{2th-B} and the residual voltage is between the ground potential and V_{1th-R} to produce red, the periodic voltage at L_2 being between V_{2th-B} and V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce magenta, the periodic voltage at L_3 being between V_{2th-B} and V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce blue, the periodic voltage at L_4 being above V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce cyan, the periodic voltage at L_5 being above V_{2th-G} and the residual voltage is between V_{1th-B} and V_{1th-G} to produce green, the periodic voltage at L_6 being above V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce white.

43. (New) The recording method according to claim 18, wherein the display element has R, B and G layers corresponding to respective threshold voltages V_R , V_B and V_G , and the threshold voltage corresponds to one of the respective threshold voltages.

44. (New) The recording method according to claim 18, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

45. (New) The recording method according to claim 43, wherein the threshold voltage V_R for the R layer corresponds to one of a first R threshold voltage V_{1th-R} and a second R threshold voltage V_{2th-R} , the threshold voltage V_B for the B layer corresponds to one of a first B threshold voltage V_{1th-B} and a second B threshold voltage V_{2th-B} , the threshold

voltage V_G for the G layer corresponds to one of a first G threshold voltage V_{1th-G} and a second G threshold voltage V_{2th-G} , and relative values of the respective threshold voltages rank in ascending orders of magnitude V_{1th-R} , V_{1th-B} , V_{1th-G} , V_{2th-R} , V_{2th-B} and V_{2th-G} .

46. (New) The recording method according to claim 45, wherein the periodic voltage corresponds to a light amount, the light amount that rank in ascending order of magnitude L_0 , L_1 , L_2 , L_3 , L_4 , L_5 and L_6 in ascending order, the periodic voltage at L_0 being between V_{1th-G} and V_{2th-R} to produce black, the periodic voltage at L_1 being between V_{2th-R} and V_{2th-B} and the residual voltage is between the ground potential and V_{1th-R} to produce red, the periodic voltage at L_2 being between V_{2th-B} and V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce magenta, the periodic voltage at L_3 being between V_{2th-B} and V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce blue, the periodic voltage at L_4 being above V_{2th-G} and the residual voltage is between V_{1th-R} and V_{1th-B} to produce cyan, the periodic voltage at L_5 being above V_{2th-G} and the residual voltage is between V_{1th-B} and V_{1th-G} to produce green, the periodic voltage at L_6 being above V_{2th-G} and the residual voltage is between the ground potential and V_{1th-R} to produce white.

47. (New) The recording method according to claim 3, wherein the threshold voltage is a second threshold voltage that causes a high reflectivity of the display element, and the residual voltage includes a voltage level greater than a first threshold voltage that causes a low reflectivity of the display element, the first threshold voltage being less than the second threshold voltage.

48. (New) The recording method according to claim 17, wherein the threshold voltage is a second threshold voltage that causes a high reflectivity of the display element, and the residual voltage includes a voltage level greater than a first threshold voltage that causes a low reflectivity of the display element, the first threshold voltage being less than the second threshold voltage.

49. (New) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a resistance component being controlled at least depending on a polarity of a voltage to the optical switching element, the display element having first and second threshold voltages, each of the threshold voltages causing a change in reflectivity of the display element, the method comprising:

applying a driving voltage to the photo addressable recording medium during both a first case where the optical switching element is irradiated with light and in a second case where the optical switching element is not irradiated with the light so that a voltage to the display element is greater than the second threshold voltage, the second threshold voltage being greater than the first threshold voltage;

controlling an electrical charge amount of the display element so that a bias voltage corresponding to the electrical charge amount is greater than the first threshold voltage by means of controlling a ratio of the resistance component depending at least one the polarity of the voltage of the optical switching element; and

applying a residual voltage to the display element, the residual voltage corresponding to the electrical charge amount, after turning off the driving voltage so that the reflectivity changes.

50. (New) The recording method according to claim 49, wherein the first threshold voltage causes a low reflectivity of the display element and the second threshold voltage causes a high reflectivity of the display element.

51. (New) The recording method according to claim 49, wherein the first and second threshold voltages are greater than a ground potential, and the residual voltage is greater than the ground potential for a residual duration corresponding to a charge storage time greater than an applied duration of the driving voltage.

52. (New) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a resistance component being controlled at least depending on a polarity of a voltage to the optical switching element, the display element having first and second threshold voltages, each of the threshold voltages causing a change in reflectivity of the display element, the method comprising:

applying a driving voltage to the photo addressable recording medium, the driving voltage being greater than the second threshold voltage, the second threshold voltage being greater than the first threshold voltage;

controlling an electrical charge amount of the display element, so that a voltage to the display element is greater than the second threshold voltage and a bias voltage corresponding to the electrical charge amount is greater than the first threshold voltage, by means of controlling a ratio of the resistance component depending at least on the polarity of the voltage to the optical switching element; and

applying a residual voltage to the display element, the residual voltage corresponding to the electrical charge amount, after turning off the driving voltage so that the reflectivity changes.

53. (New) The recording method according to claim 52, wherein the first threshold voltage causes a low reflectivity of the display element, and the second threshold voltage causes a high reflectivity of the display element.

54. (New) The recording method according to claim 52, wherein the first and second threshold voltages are greater than a ground potential, and the residual voltage is greater than the ground potential for a residual duration corresponding to a charge storage time greater than an applied duration of the driving voltage.